

10/563360

WO 2005/003382

PCT/AU2004/000905

1/9

1420 Rec'd PCT/PTO 04 JAN 2006

SEQUENCE LISTING

<160> NUMBER OF SEQ ID NOS: 4

<210> SEQ ID NO. 1

<211> LENGTH: 9781

<212> TYPE: DNA

<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 1

```
ggatcctctt atctcagcct cccaagtagc tggaccacag gagcaaacca ccatgcctgg      60
ctaattttct gtattttttt gtaaagatga ggtgggtctc actctgttgc ccaggctgat      120
cttgaactcc tggtttcaag caatccctca cttgaactc ctaaagtgtc gggattacag      180
gtgtgagcca ccttgcccag ctccactctg taataagttg agagagaggt atatatagag      240
agaccacagt cacataactt ttattacagt acctgttat gattgttcta ttttactatt      300
ggttattggt gttagtctct tgetgtgcct aatttatata ttaactttgt tttgttttgt      360
tttgttttgt ttttgagaca cggctcact ctgtcaccta ggctggagtg cagtggcacg      420
atctcggtc acttcagtct tgcctcctg gattcaagct attctcatgc ctccagcttc      480
cgagtagctg ggactacagg cacacaccac cacaccggc taagtttttt gtatttttag      540
tagagacagg gtttcatcat gttgcccagg ctggctcca acggctgacc tcaagtgatc      600
cacctgcctc ggcctcccaa agtgctggga ttacaggcat gagccaccat gcttggccac      660
attaaccttg atcataggta tggatgtgta gggaagagca tcgtatatat agtgctcggt      720
actaccaca gattcaggca tccattggga tcttgaaca catccttgtg gttaaggggg      780
atgaccatgt gtgatggccc tccagctcc ctgcctcctg ctctggagt ctccatggct      840
ctcagcgcc aatcctcct gtctttcagc ctttgcct gtcagcctag actcaatgac      900
ccattgtgaa cattaccac gatgccggt gacatgttg aaactcttc cttcttattc      960
taaaccctaa ggcctgtca acacgtcta ctgggaagc acacctactg ctttggtttc     1020
```

SUBSTITUTE SHEET (RULE 26) RO/AU

caatatgatt tcagagcaat tgccttgcaa accttcagca acaactctc ctgtgctgtt 1080
aaccctttga aagagtgtgc atttttaaaa agttggcatt gggcacagtg gctgaagcct 1140
gtatcccagc actttgggag gccgaggcag gtggatcacc tgaggtcagg agttcgagac 1200
cagcctggcc aacatggcaa aaccccgctc ctactaaaaa taaaaaatt agctgggcat 1260
gggtgtgggc acctgtaatc ccagctactc gggagggtga ggcaggagaa tcacttgaac 1320
ccaggaggca gaggttgcac tgagccgaga tcgcatcact gcactccagg cagggtgaca 1380
gagcaagact ctgtctcaaa aaaaaaaaaa aagttggcat caatgtgttc ttccatctga 1440
tttatgtctt cacattacag catgttttct gtatgagccc acacatatca gatggtaact 1500
ttagaatggg tgggtctgtg ccattgtccc ggcacagctg tgagggtggg gacaggcagg 1560
tcagcagggt cgtacagagg ggctttcttc tacattggag ttcaggtcgg atgatccagg 1620
tccacagtgt tcattcaggg ctctgtgttc tgggtggctc cgttgatttc taataaaagc 1680
tgcagactga gccagtcctg cacacacagg gagataggac aacgaacatt tgggatgtga 1740
ttaagcccat caatccaatc ggtgactaaa atcagacagg aagccctgtg ccccttagat 1800
aaagaaagcc tggggggaaa atgatctcaa gttcatttcg attggcgcaa actcctcaca 1860
gaggaaaaaa tgtacagtta gagtgaagtg aaagaacatc tctataaaat atgcatcact 1920
tcttgccggg gaggagagag gagctatgga aagctacacc aaagctgtat tcaactggaca 1980
aaaatgcttg actcaggaag gaggccggag cggcgagtcc tgtgatgcca tggcgggagg 2040
tgggtcccat gtaaacagtg gtgttcctgt caccctgagc acatgcagtc tcccgagggt 2100
aaccagaact gatgcaagag cccctgctgt ggaagtcacc acgctctccc agaacgcgcc 2160
tccccccagg tctgagtgat ctcatcgccg aggtgaatag ggctttggcc gctctcccaa 2220
aggagccgcg ccagacaca gccatggcct gggactctgg ggtcaccctg gggtcagaag 2280
gaattatctg tattcacttg gttttgggta ttgtcagtgt tatttatgtg tttatttatt 2340
ttttattttt agagacaggc ttttactctg tctcccaggc tggagtgcag tgatgggatc 2400

3/9

acagttcact gcaacctcaa atttttcaggt tcaagggatc cttccacctc agcctcctaa 2460
gtagctggga ctacatgcat gtgccaccac acctgactaa ttttttaatt attttagag 2520
atagggctct gccatgttgc ccaggctggt ctcaaacttc tgggctcaag gaatcctccc 2580
accttgccct cccaaagtgt taggattaca ggagttagcc acctcacctg gcctggtgtt 2640
gttattttta aacaagaaaa gaaatgacca gaaaggctga aaggaaacac gcaccatcct 2700
ccataggagg ctgcaagggt tgggtggcacc aggtccagaa gaagaagggc tcatagagca 2760
gaaaccagag cttgagcacc acctgggtgg catttgaag tgcctcagca cagccacttt 2820
gcagagtttg cacatttaaa ataaggagta ggctgggcac agtggctcat gcctgtaatc 2880
tcagcacttt aggaggccaa ggcaggcgga taccttgagt tcaggagtcc gagaccagcc 2940
tggccaacat ggtgaaaccc cgtctctata aaaaaaatat ataaaaatta gccaggcggtg 3000
gtggtgtgtg cctgtagtcc cagctactca ggaggctgag gtgagagaat cacttgaact 3060
ggggagggtg aggttgagc gagccaagat catgccactg cacttcagcc tgagcaatag 3120
agttagatcc tgtctcaaaa aattaattaa ttaagttaa taaagagtag cgcaattttc 3180
ctaaacagat tgaccagaga cacccttaaa attatacgac tgtgatagaa ttcctacaga 3240
tattcattag ctatgatatg ttggataaat aagcagatgg cagtgaatat tcttacagac 3300
caaatatttc tgcaaataaa attaaattct tatgtaaaat atgcatacat aaatatattc 3360
tagatataat ttataatat cagaaatgat catatttttc atttgcaagt actttcttct 3420
ttttattttt agagttgggg gtcttgcctc gttgcccaag ctgtactgca gtggcatgat 3480
gatagctcac tgcagccctg gactcctggg ctgacgtgat ctgcctgccc cagcctcctg 3540
aatggttttt tctttttttt gagacggagt ttcactcttg ttgccaggc tggagtgcag 3600
tggcgcgatc tcagctcaca gcaacctcca cctcccaggt tcaagccctg aatggctttt 3660
taaaaatatt ttctcagagt cagggtcttg ctctgttgcc cagactggtc tcaaactcct 3720

gggttcaagc gatccccctg tcttggttc ccaaagtgt gggattatag atgttagcca 3780
ctgcctcctg tcaatatttt ttaaattaat agacattcct tagagcagtt tcagggttac 3840
agaaaaattg agcaggaagc acagagttcc catattatta tcccttctct tccctccgca 3900
gtttcccctg ttattatctt gtacttagtc cagtgatatt gttttttttt taaactacta 3960
ttgtttttca gtttttagat agtcaaaaca aagttgtaga cctatcatta tcttgtagg 4020
gaatttaaaa aatgtatttc actgggctaa tgtattagtc cgttctcatg gtgctgtaaa 4080
gaaatgccc agactgggta atttataaag aaaagagatt taatggactc acagttcccc 4140
atggctggca gagcctcagg aaacttaca tcatggagga aggcacctct tcacatggcg 4200
gcagaagaca gaatgagcac aaggagggga aatgctagac gataataaaa ccatcagatc 4260
tcatgagact cacagcttg ggaaaaccgc ctctgtgatg caattacctc cacctgtttc 4320
tgcccttgac ctgtaggat tatggggatt aaaattaaag gtaagatttg ggtggggaca 4380
cagagccaaa ccatatcaac taaatattca aaaaagtac tgctctaaga gagtacttca 4440
atttttaact tggtagcctt ggttcttgtt catgtgtgta aactaacat agcttaggag 4500
gcagttggaa aaaatttgag tcaggggctc ttaaagtgc ctttcttcat ctttgagaaa 4560
acagtacgag gctttccctt gcaaagttct ttccatcttt acttctctta tctgaaacgc 4620
aaggaaacta tagcttatca aaggtaaag gactggacca gactcgtgca actgacctca 4680
gaggagagaa aggaaacttt ctgacttcca acccaggct cattccagta gcctgcacat 4740
tcaccacggg ggtgtatttg aagattgata gctggcgatg tgtaggag ctcaaaagag 4800
gtagatttag gagcagagaa agaaagtct gtgtcggaga atcagcaaac caacctgaga 4860
aactcaactc actccacaaa ggaattgatt gaaaattaga tgtgttcaaa aataacttga 4920
ataaactcat ggatactcca tcataagtta ttaaggaaaa ttccattctt tctgacacgc 4980
ttccatgaac aaccaggctc ttccagtgcc agagagagag tgttgggctg ggcacacca 5040
gtgtggagcc agtacatcta cttttatgaa agtcatttag aagcatcact aaaggaactg 5100

aaaaacaatt caccaataat gacagtactc caacacctag ttttatcttc taatctctat 5160
ccatacatct atgtagtggt tatattatta ttattttttg agatggagtc tcactcttgt 5220
tgcaagatct tggtcactg caacctccac ctccagggtt caagtgattc tcttgectca 5280
gcttcccgag tagcggggat tacagggtcc cgccaccatg cctgactaat ttttgtgttt 5340
ttagtagaga tggggtttca ccatgttggc caggctggtc tcgaactcct gatctcaagt 5400
gatttgctg cctcggcttc ccaaagggtt gggattatgg gtgtgagaca ccatgcctga 5460
tctacattat ttatatcaca gctcatgtac aaatttatct tcttcttctt ttgggcaagg 5520
caattttatg atttattttg gtatgtcggc ataattatgt tatcagtcac ctcaatggct 5580
acacaatatt gcagtattct aacatgtcct agtctactag gccctatgt ttgacatct 5640
aagttatttt cagtatttag acagtcaaaa caatgttgaa tacttatcat tatcttgtat 5700
ggggatttaa aaaatgcatg tcagcaggct aaatattcaa aaattactgc tccaagaaaa 5760
taatccaatt tttaacttaa tattttgaaa taatttcaaa cttaccaaag agttgcaaga 5820
ataaagacct cctcctacag ttggtgaac agctcttaac aagaataaga ttgtaagag 5880
tccttcccat gccttcagct tgtcctgttt tgatgtttct cattgtttgt gtggaattca 5940
cacaactggt gctgttacca ccatgggctt ctagtctgga tcagtgggtc tcagtctttt 6000
ttgcaccagg gaccagtttt gtaaagatag cttttccacg gacagaggga ggggagatag 6060
tttcgggatg attcaagagg attacattta ttgtgcactt tatttatatt actattacat 6120
tgtattatat aatgaaataa tggtagtact cagcataatg tagaatcagt gggaaccctg 6180
agcttgtttt cttataacta gatggtccca tctgggggtt atgggagaca gcgacagatc 6240
atcaggcatt agattcttat aaggagtga caacctcaat ccctcgcatg tacagttcac 6300
aatagggttt gactcctat gagaatctag tgccactgct gatccaaccg gaggtgcagc 6360
tcaggcagta atgcgagtga tggggagcgg ctgtaaacac agatgaagct tcactggctc 6420

tccagccact cacctcctgc tgcgcagcct gggtccctaac aggccacgga cagataccag 6480
cccatggccc cagggcggg gattcccagt ctagatggag acctagacaa ggcgtgcgac 6540
aataacaccg attttagatc catcatgaca ttaccccat ccctgcaaa gccagatggc 6600
taccaaaatt aaatcttagt ttagacacag aatgtccgtc ttctggtcca aaacatcctt 6660
gtcataagtt tcttggctgg gcgcgggtggc tcacacctat aatcccagca ctttgggagg 6720
ctgaggcagg tggatcacga ggtcgggggt ttgagaccag cctgaccaac atggtgaaac 6780
cccgtctcta ctaaaaatac aaaaaatta gctgggcgtg gtggcgggca cctgtaatct 6840
cagctactca ggaggctgag gcaggagaat tgcttgaacc tgggtggagg tgcagtgagc 6900
cgagatcaca ccactgcact ctgcctggg cgacagagca agactctgtc tcaaaaaaaaa 6960
aaaaaagaaa ataaaaaaaa aaaaacaagt ttcttgccca ctcttccttt ctctgagttt 7020
ccagagacat cacatcattt cttaccacgc tgagcagagt cccagcatgg ctctcgttcg 7080
aatacccata ctgccacctg cccagtgag aagggttgga gcagccctg ttctctgccc 7140
ccgccacctc catgactcat gcattctgtg ggggaggcgc ccactgcaga aacagccagg 7200
ctggctggga aaagccctgc agcaattccc cgtccagttt ctctgtgccc actttgtctc 7260
cgtgttatct aggcctggat ttatttctct tttttgaaaa tgaagggtt tgatgaaatg 7320
ttcacaggat gtgaggtcac caagattttt ttctttttt tctgttcttt tcttttctc 7380
gaagtgatcc cttgactaaa atcaaggctc ccattgtcac cttatcagcc tgcccatgcc 7440
taattctgca ttctcaggct tcccagaat ctgtccgagg gaaaccaatc tcaattcaga 7500
aggaacacag agggcccagt ttctagggtc gcaggatatt gctgggtctt aatcattcgg 7560
gtatatttca gcaaagctca gggccctgc taatgatctg caaacctct cctctcagtc 7620
tcccgttgtt tagccctat ttataagtga gtgcatgtg ttgttcactt tctgtttctg 7680
agttatttca gttaggataa tggctccag ttcatccat gttgctcaa aagacagact 7740
tcattgtttt ttacggcttt gtcgtattcc tcggtgtata tgtgcatttt ctttatccag 7800

tcctccattg atggacactt aggttaattc tgtgcctttg ctattgtgaa ttgtgctgtt 7860
gtgaattgtg tgtgataaac gtgtgagtgc aggtgtcttt ttgatgtaat gatttctttt 7920
tctttgaata gatactcagt agtgggattg ccgggtcaaa tggatgttct atttttagtt 7980
tgggaaatct ccatattgtt ttccatagag gttcaggatc caggatttaa gtgcaaccat 8040
tcagtggaaa accatcctct caagagttca aatgagagtc ctcatgacca gactccctg 8100
ctgaacggca atgccccacc ccccaaaaaa gcctccatcc tcaccatctt agaccacatt 8160
gcaggaaaagc agcccatgac ccaccagaca ggcccacagc tgctgctgct catgggaggt 8220
ctacctcccg tgctcagcag gcaaccacc ccagtgcctt tttctacaa tgaccatcag 8280
cagggtgca gcttcataaa aatgtgaaaa acagtttgaa agcaatgtga aaagcagtta 8340
ggtgcctttc aacttcaaac tcagcactca tggtttgaca aatatgagta tatttaggat 8400
cagaatgtat gaaatctggc ctctcctgaa tagtcggtca tcccacaatt tcctctgcca 8460
aacttctctt ccctccctgc gttctttctt tcacctctct ctcatcttta caaggtctgg 8520
tctcagccag acatgaacca atgatgatag atgctcctgc tgagccctgt gatgtgccag 8580
ggccctgaca tgctgggctt ctctctgac ctcacgtgac ctgcagatgc aaaagccaga 8640
gctcagcata gttgaaaatc ttgattgagg tcatatccca gttactggca cagccggatt 8700
taaacctaaag actttccctt acacgacagg gcttttattt ctcaagtcac tgaaaagggtg 8760
tcagcaaggg aaatggcttg tctatttcca ggggcatttt acaagcaaact actgaaaggc 8820
ttcgggtgggc ttaagggtg atggctttga tcgaatttca ggcatgttgg cccaaggcc 8880
ctgtgtatat tccctgggac cactcaaggg gatgctggag ccggaaagtc cccggaggcc 8940
acctactgca gccctgcact ttacaaagaa gagaaagatt ctccctaaaa ttacagaaca 9000
gggccaaga tgccctaccg agcaaacccc catgggggca cctcctaccg caggtgagcc 9060
caaggctggt cctgccttct cagtggctac cccctgagc tcccgacca cacaaagtgt 9120

8/9

tccaatcctt gtgcatcctc cagtcctttt aacctctcat gtcctgagag gccagagcta 9180
 cagccacaga ttccagaaga caccctcctc ccagcccca cctgctgcct ttagaattat 9240
 aaacacttct tgtcatcaca gggtcctgaa agtcctttt aagcctggga cactaggact 9300
 ctaaaggaag atgattctta aggtcccatc ccacttccaa attcctgcga ttcaatgaca 9360
 tcacggctgt gaataatcag cctggcccga agccaggatg ggctgtgctg cttccaccgt 9420
 gaacttcctc cccctgcttt ataaaaacag gcctgcctca gtcctcctcat ggccctgtcc 9480
 actgagcatc ctcccgcac acagaaacc gccagccgg ggccaccgac cccacccct 9540
 gcctggaac ttaaggaggc cggagctgtg gggagctcag agctgagatc ctacaggagt 9600
 ccagggctgg agagaaaacc tctgcgagga aagggagga gcaagccgtg gtaggtcggg 9660
 tttctgtacc ttgggtctg tctcctcttc tttctcttaa aagtcttcc agcaagctga 9720
 gccagtgaag gaatgcttta accaaggac caactttgta attcaggcaa ctgaggatc 9780
 c 9781

<210> SEQ ID NO. 2

<211> 20

<212> DNA

<213> Artificial

<220>

<223> primer sequence

<400> 2

attggcgcaa actcctcaca

19

<210> SEQ ID NO. 3

<211> 18

<212> DNA

<213> Artificial

<220>

<223> primer sequence

<400> 3

atggctgtgt ctggggcg

18

<210> SEQ ID NO. 4

<211> 18

<212> DNA

<213> Artificial

<220>

<223> primer sequence

<400> 4

atggctgtgt ctggggca

18